

CLEAN SET OF REMAINING CLAIMS AS AMENDED 1-27-03

1. (amended) A method for forming end-lengths of plain-end pipe joints having an inner pipe diameter and an outer pipe diameter so as to provide desired final dimensions sufficient to increase the critical area at the end of thread engagement for an integral threaded connection for like joints that may be as strong selectively, as the pipe strength, comprising: machining a predetermined end-length of the pipe joint so as to effect a desired first configuration; swaging the first configuration to have a desired inner second configuration and a desired outer third configuration; and then machining the end-length as necessary to effect the desired final dimensions for the end-length.

C.1 2. (amended) The method of claim 1, further comprising: forming a box by cutting a counterbore of predetermined length so as to provide a desired first inner configuration within the end-length; swaging outwardly, the first configuration to have a desired second inner configuration and a desired third outer configuration having an outer diameter larger in dimension than the original pipe outer diameter; and then machining the end-length to effect the desired final box dimensions such that the box thread maximum diameter exceeds the pipe outer diameter.

3. (twice amended) The method of claim 1, further comprising: forming a pin by machining a predetermined end-length of the pipe to a desired first outer configuration; swaging inwardly, the first configuration to have a desired second outer configuration and a desired third inner configuration having an inner diameter of smaller dimension than the pipe inner diameter; and then machining the end-length to the desired final pin dimensions such that the pin thread minimum diameter is less than the pipe inner diameter.

6. The method of claim 2 wherein the desired first inner configuration comprises: a substantially conical surface extending substantially from the pipe bore and increasing in diameter toward the pipe end; a second annular surface positioned intermediate the conical surface and pipe end.

7. The method of claim 6, further wherein: the second surface is substantially cylindrical.

8. The method of claim 6, further wherein: the second surface is substantially conical.

9. The method of claim 6, further wherein: the second surface is substantially curved.

10. The method of claim 3 wherein the desired first outer configuration comprises: a substantially conical surface extending substantially from the pipe outer diameter and reducing in diameter toward the pipe end; and a second annular surface positioned intermediate the conical surface and the pipe end.

11. The method of claim 10, wherein: the second surface is substantially cylindrical.

12. The method of claim 10, wherein: the second surface is substantially conical.

13. The method of claim 10, wherein: the second surface is substantially curved.

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20. The method of claim 2, further comprising: the box being swaged by forcing a suitable swaging mandrel axially into the counterbore.

21. The method of claim 3, further comprising: the pin being swaged by forcing a suitable annular swaging tool axially around the first outer configuration.

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